

DOCKET NO. 03-0371

PUBLIC UTILITIES COMMISSION

**CONSUMER ADVOCATE'S RESPONSES TO
HREA'S INFORMATION REQUESTS ON THE
CONSUMER ADVOCATE'S WRITTEN DIRECT TESTIMONY**

The responses to the following information requests were prepared by Mr. Herz, who is the sponsor of the responses.

HREA-CA-T-1-IR-1. On page 9, should not you also address the case where existing customers choose to install stand-alone DG and then leave the grid? HREA believes this can happen when customers feel that leaving the grid is in their best option to reduce their energy cost or to achieve other objectives, such as becoming energy independent.

RESPONSE: Although the Consumer Advocate acknowledges that customers may leave the utility system because the customer determined this to be the best option to reduce their energy cost, the Commission instituted this generic proceeding to examine the potential benefits and impacts of DG on Hawaii's electric distribution system and markets. Thus, a customer served by a stand-alone or isolated generating unit and not connected to the grid, will not be served by the electric utility. As noted in the referenced testimony, only DG that is directly or indirectly connected to the grid is addressed in the testimony since this situation may have a significant impact on the electric utility's operations, the cost of priority service and the resulting rates for the effective deployment of DG in an orderly manner.

HREA-CA-T-1-IR-2.

On page 10, you do not believe it would be viable to convert current "emergency/standby generation to DG?

RESPONSE:

Yes, it may be viable in certain situations to convert emergency/standby generation to DG. If emergency/standby generation equipment is converted and utilized to replace some or all of the electric utility services from the utility and/or to manage the customer's load, however, then the generation is no longer emergency/standby generation. With such a conversion, this generation would then be considered as DG for purposes of this proceeding. The reason is because emergency/standby generation is generation that only operates during the period when electric utility service to the customer is interrupted. Therefore, emergency/standby generation is not considered to be DG for purposes of this proceeding.

HREA-CA-T-1-IR-3. On page 13, HREA believes you have introduced a new term: "behind the meter" generation. Would you agree that this term could be replaced with the term: "customer-sited generation?"

RESPONSE: Yes, assuming that the "behind the meter" generation illustration on CA-102, page 4, and the description provided in CA-T-1, page 12, line 20 through page 13, line 13, carries the same intended meaning as the term "customer-sited generation."

HREA-CA-T-1-IR-4. On page 15, would you agree that the installation of DG in a period of load growth is not likely to “strand” existing utility generation? If not, why not?

RESPONSE: No, not necessarily. Whether or not the installation of DG in a period of load growth will strand utility generation, will depend on the load of each island compared to the available generation and the particular circumstances. For instance the installation of a DG at a hotel resort located in the Honolulu area on the Island of Oahu during a period of growth is not likely to strand existing utility generation given HECO’s forecasted load compared to the company’s available generation. The installation of the same size DG unit at a hotel resort on the Island of Lanai or Hawaii, however, could strand existing utility generation even if load growth is forecasted for each of those islands.

HREA-CA-T-1-IR-5.

On page 15, would you agree that the distinction between "firm" and "as-available" energy is not as black and white as you have described? Specifically, as-available energy, e.g., run-of-the-stream hydro, wind, and photovoltaics (PV), will be on-line (automatically dispatched) and providing capacity a portion of the time when the utility would normally dispatch additional generation, e.g., to meet peak load. Consequently, as-available sources arguably have some capacity value and are automatically dispatched. Also, would you agree that "firm" sources are only firm if the fuel is available, i.e., there are no disruptions in the fuel supply, and the desired unit is available, i.e., not down for maintenance or repairs?

RESPONSE:

From a planning perspective, the planning criteria for each of the island electric utility companies presently makes a "black and white" distinction between "firm" and "as available" energy resources. This capacity planning criteria is used to develop and evaluate long-range, generating resource plans through the IRP process in determining the appropriate years in which firm resources should be installed. In general, firm capacity must be added to the utility system when the capacity planning criteria cannot be satisfied.

Whether or not certain available energy resources or technology types (such as run-of-the-steam, hydro, wind and photovoltaics) have some capacity value that should be recognized in the IRP planning process or avoided cost calculations is a matter that should be dealt with in the utility's IRP process in consideration of the specific facts and circumstances associated with each resource at that time. From an operating perspective, the dispatch and management

of a utility's firm resources does take into account the automatically dispatched, as available energy resources and the portion of load served that the utility would normally dispatch additional generation.

With respect to the final part of the question, yes the operation and dispatch of firm resources is dependent on the fuel supply and the need to take the unit down for scheduled or unscheduled maintenance and repairs.

HREA-CA-T-1-IR-6.

On page 16, you have not actually defined "externalities?" Would you agree with the following definition of externalities as applied to the generation of electricity? "Externalities are consequences of the fuel cycle associated with the generation of electricity (emissions and other effects) that are not internalized in the price of the sales transaction. These consequences represent hidden costs that may be positive or negative, and include environmental, health, economic and cultural impacts."¹

RESPONSE:

We agree that externalities should be considered when implementing DG. For example, HELCO and the Consumer Advocate agreed that concerns raised with respect to the Hawaii Externalities Workbook can be appropriately addressed in HELCO's upcoming 3rd IRP cycle (see Commission Order No. 20821 filed in Docket No. 04-0046, regarding HELCO's Integrated Resource Planning). The proper forum to address the definition of "Externalities" and to evaluate externalities related to DG is within the utility companies' IRP planning process. Thus, we are not attempting to address or define externalities outside of the context of the IRP process.

¹

This definition is an edited version of the definition found in the HECO Externalities Workbook.

HREA-CA-T-1-IR-7.

On page 16, would you agree that some renewable technologies, such as biomass have fuel source that can be transferred to another location, or that wind turbines and PV can be moved to another location?

RESPONSE:

Yes. As noted in the testimony, a landfill gas technology generator can be moved to another location if the volume of methane gas needed to run the engine is no longer available at the site. The point of the testimony, however, is that much of the renewable energy technology such as landfill gas, wind and hydro "is very site specific and the fuel source is not transferable to other locations, unlike fossil fuels."

So, while it is possible to move the generator equipment from one site to another, the "fuel" source at that site (landfill gas, wind or hydro) is not transferable from one location to another site as is fossil fuels.

HREA-CA-T-1-IR-8.

On page 17, you note that “wind facilities require a large footprint of vacant land located away from the general population for safety and noise concerns.” Would you agree that the actual footprint (disturbed land) of windfarms is a small portion of the overall land encompassed by the windfarm? Moreover, would you agree that windfarms can be good partners and neighbors, especially in dual-use applications such as ranches, and in urban locations, such as a park in Toronto, Canada?

RESPONSE:

The context of the statements on page 17 of my testimony about wind turbines was related to applications on the mainland. Wind turbine applications on Hawaii may differ from applications on the mainland because of specific terrain and wind conditions on specific islands. Because the mainland is a large land mass and the Hawaiian islands are a much smaller land mass than the mainland, it is important to recognize that the number of wind turbine applications on Hawaii may be more limited than on the mainland. So, regardless of the amount of "disturbed land" on a wind farm or specific wind turbine applications on the mainland, (or on any other continent) specific wind, geography and environmental considerations of specific sites in Hawaii are the important factors for consideration when siting wind turbines in Hawaii.

HREA-CA-T-1-IR-9. page 18, would you also consider pumped-hydro storage to be a viable storage technology?

RESPONSE: Yes, pumped-hydro storage is a viable storage technology. The size of such facilities required to be economically feasible, however, generally exceeds that which would be considered DG for Hawaii's island electric systems. Also, the Hawaii island utilities do not have the off-peak low cost energy producers (nuclear and coal) that pumped-hydro storage generally are installed to take advantage of.

HREA-CA-T-1-IR-10. page 21, would you also consider the option for a DG to deliver excess energy to the utility under a power purchase agreement (PPA)?

RESPONSE: Yes, in fact it would be preferable that excess energy from a DG be delivered to the utility under an purchase power agreement between the parties, where the energy is sold at the utility's avoided cost, as opposed to a net metering arrangement where the energy is sold at the utility's retail rate.

HREA-CA-T-1-IR-11. On pages 22 and 66, would you agree that a windfarm could provide the following distributed benefits: (1) reduction of line losses, e. g, when the windfarm is located closer to a load center than existing generation (examples: a windfarm at Hawi on the Big Island and a windfarm at Kaheawa Pastures on Maui), and (2) serving a large fraction of local load and strengthening a weak radial feeder (example: a 10 MW windfarm at Hawi, which could supply all of the Hawi load and feed power to Waimea a good deal of the time)?

RESPONSE: Yes. The fluctuating output from wind turbines, however, can also negatively impact voltage and frequency of the electric system.

HREA-CA-T-1-IR-12. On page 45, could you provide an example of how “unbundling the rates will allow the utility to continue to receive revenues for the services provided to the customer?”

RESPONSE: Please see CA-T-1, page 62, line 4 through page 63, line 3, where two methods that allow the utility to continue to receive revenues for the services provided even if energy sales by the utility to that customer are decreased by customer-sited DG are described.

HREA-CA-T-1-IR-13. On page 46, you discuss the potential rate impacts due to loss revenues from installation of DG, presumably from a non-utility DG provider. Would not there also be rate impacts if the utility installed and rate-based DG? Have you compared the potential rate impacts for both cases, i.e., non-utility vs. utility owned DG?

RESPONSE: It is assumed for purposes of this response that the utility installed DG is done pursuant to the utility's lowest reasonable cost plan as determined through an IRP process and the utility DG is used together with all other utility resources to serve all customers. Therefore, any rate impact of such utility installed DG is to recover the utility's costs of implementing its lowest, reasonable cost plan of serving all customers, including those with customer-sited DG.

On the other hand, under the current bundled utility rates, customer-sited DG can cause a loss of revenue and the customer with DG ends up not compensating the utility for the transmission, distribution and backup generation services provided by the utility. As noted in the testimony, this "decreased revenue may eventually cause the electric utility to increase its rates to replace the revenue shortfall, to the extent the revenue shortfall exceeds the decrease in expenses caused by DG if the utility is unable to replace the loss load with load from new or existing non-DG customers." (See CA-T-1, page 46, lines 10 - 14) No comparison of potential rate impact is possible for either case as presented at this time.

HREA-CA-T-1-IR-14. On page 62, you discuss two alternative methods for using unbundled rates to determine the price to be paid for various services provided by the utility. Have you estimated what the price might be for these services in Hawaii?

RESPONSE: No such estimates have been made at this time.

HREA-CA-T-1-IR-15. On page 70, you suggest that there could be problems with reliability of power from a 3rd party DG. How would a DG contract, including provisions to ensure reliable services, be different from a PPA that binds an Independent Power Producer (IPP) to provide power to a prescribed schedule? HECO doesn't appear to have any trouble integrating its purchased power, which, incidentally, is about 24% of its sales.

RESPONSE: It is anticipated that a DG contract would include provisions to ensure reliable service comparable to those found in a PPA contract. As noted in the testimony, however, "[e]ven with such contractual incentives, the electric utility will be the only entity with the regulatory obligation (i.e., "on the hook" with the Commission) to provide reliable capacity and energy to its customers." (See CA-T-1, page 70, lines 13 – 16.)

HREA-CA-T-1-IR-16. page 72, please elaborate on your point that “if rates are not properly set up now, it is possible that the utilities could have a competitive advantage?”

RESPONSE: Electric rates should be the benchmark to evaluate the economic benefit of installing DG. If the electric utility unbundles its rates to reflect the avoided costs associated with DG, then it will be clear to customers, the utilities and third party DG developers whether a DG unit is the economically option to meeting the customer's load. If the utilities continue to use bundled rates and separately negotiated contracts with customers for DG projects, the utility is in a better position to implement DG than are others since only the utility knows what is feasible and most economical for the customer.

HREA-CA-T-1-IR-17. On pages 73 – 74, you discuss possible rules to prevent the utility having an unfair advantage in the DG market. Do you really think this can be done without requiring the utility to establish an unregulated affiliate to compete in the DG market?

RESPONSE: The referenced testimony makes the point that all parties, including utilities, should be allowed to participate in the DG market. As noted in this information request, the testimony also addresses "possible rules to prevent the utility from having unfair advantage in the DG market". The Consumer Advocate's position on how a utility chooses to participate; (i.e., either as a regulated or unregulated aspect of the utility's business) will be addressed based on the specific, and in the context, of the utility's proposal at that time.

HREA-CA-T-1-IR-18. On page 74, you discuss the issue of allowing the utility to rate-base its investments. You indicate your support if the DG is used for all customers like any other generating unit, but question rate-basing DG for single customer or an identifiable group of customers. In the first case where the DG is for all customers, should not this type of DG be competitively bid, as you have noted should be the case for future wholesale generation? In the second case, are you concerned that ratebasing utility investments will result in rate increases?

RESPONSE: With respect to the portion of the question regarding whether competitive bidding should be used for DG determined through the utilities IRP process, the answer is yes. (See response to HECO/CA-DT-IR-6). With respect to the second part of this request, the concern is not so much whether ratebasing utility investments will result in rate increases as is the concern whether such investments represent the utility's lowest reasonable cost plan as determined through the utility's IRP process and utilized competitive bidding.

HREA-CA-T-1-IR-19. On page 77, if a large customer on Lanai was offered a discount, how would the resulting loss of revenues not impact the remaining customers?

RESPONSE: The utility could not recover the loss of revenues resulting from the discount is recovered from other customers in future next rate case filings. Any determination as to whether the utility should be allowed to recover the loss of revenues resulting from the discount from other customers in future next rate case filings, however, must be made after consideration of the specific facts of the circumstances under which the discount was offered.

HREA-CA-T-1-IR-20. Please comment on the nature of a competitive market for DG in Hawaii and how a level playing field could be created.

RESPONSE: The nature of a competitive market for DG in Hawaii and its impact on the creation of a level playing field may be described briefly in a couple of scenarios. In brief, the DG competitive market will be defined through the IRP process. The subsequent competitive bid process and/or potential involvement of several market participants will provide the foundation for a level playing field.

Essentially, the DG output can be utilized in one of two ways; i.e., by the utility or by the customer. First with respect to DG whose output is used by the utility together with the utility's other resources to serve all customers, the potential DG participants would include the utility, third-party PPA providers and even customers. The number, size, type and locational value of the DG to be installed would be that which results in the lowest reasonable cost plan as determined by the utility's IRP process. The DG provider would then be selected through a competitive bidding process, which will be addressed in Docket No. 03-0372. The other situation involves the customer's choice to use customer-sited DG to serve some, or all, of that customer's load, but the customer remains connected to the utility and continues to receive services from the utility. In this case, the competitive market participants would include

third-party providers, customers themselves and possibly the utilities if the utilities choose to participate.

Next, the unbundling of the utility's rates is needed so that the services provided by the utility to customers served by DG (including generation reserves, transmission and distribution, and ancillary services) are paid by that customer and not subsidized by the other customers. Possible rules to prevent the utility from having an unfair advantage in the DG market will also assist in creating a level playing field as described in the testimony (see CA-T-1, pages 73-74).